

FURTHER RECORDS AND DESCRIPTIONS OF AUSTRALIAN COLLEMBOLA

By H. WOMERSLEY, F.R.E.S., A.L.S., ENTOMOLOGIST, SOUTH AUSTRALIAN MUSEUM.

Fig. 1-7.

COLLEMBOLA-ARTHIROPLEONA Börner 1901.

Genus PSEUDACHORUTES Tullbg. 1871.

PSEUDACHORUTES EVANSI sp. n.

Fig. 1 a-f.

Description: Length to 5.0 mm. Colour (in spirit) blue-black dorsally, creamy-white on venter between coxae, on ventral tube, and on the furca. Antennae about as long as head diagonal; ratio of segments = 15:15:10:22, IV slightly clavate and wider than II and III, and without olfactory setae but with trilobed apical knob, sensory organ on III indeterminate. Ocelli 8 on each side on dark fields, equal. Postantennal organ slightly larger than a single ocellus, and with six peripheral lobes as figured. Legs, short and stout; claws with basal inner tooth and a pair of distal lateral teeth; empodial appendage wanting; clavate tibio-tarsal setae absent; surface of claws strongly granulated. Furca well developed, muero about one-fourth the length of dens with inner and outer lamellae, which terminate before the blunt apex, dens with six long ventral setae. Mandibles present with strongly-toothed head but no molar plate. Maxillae with two distinct serrated apical lamellae. Clothing of sparse short setae. Cuticle granular.

Locality: About half a dozen specimens collected by Mr. J. W. Evans on Mt. Wellington, Tasmania, September, 1935.

Remarks: Very near to *P. algidensis* Carp., 1925, from New Zealand, but differs in the number of lobes in the postantennal organ, in having a strong basal inner tooth to the claw, as well as a pair of strong distal teeth, and lastly in the form of the muero.

PSEUDACHORUTES TASMANIENSIS sp. nov.

Fig. 1 g-l.

Description: Length, 4.0 mm. Colour bluish dorsally, lighter on venter. Antennae about the length of head diagonal, ratio of segments = ? : ? : 10:15, IV without olfactory setae but with trilobed apical knob, III with sensory organ as

figured, the two sensory rods being curved and apically bifurcate. Mandibles without molar plate but with large head having fewer but stronger teeth than in preceding species; maxillae with two long apical lamellae. Ocelli eight on each side on dark fields, equal. Post-antennal organ of the *rhacticus* type, elongate, twice as long as one ocellus, and with about 20 peripheral lobes. Legs short and stout.

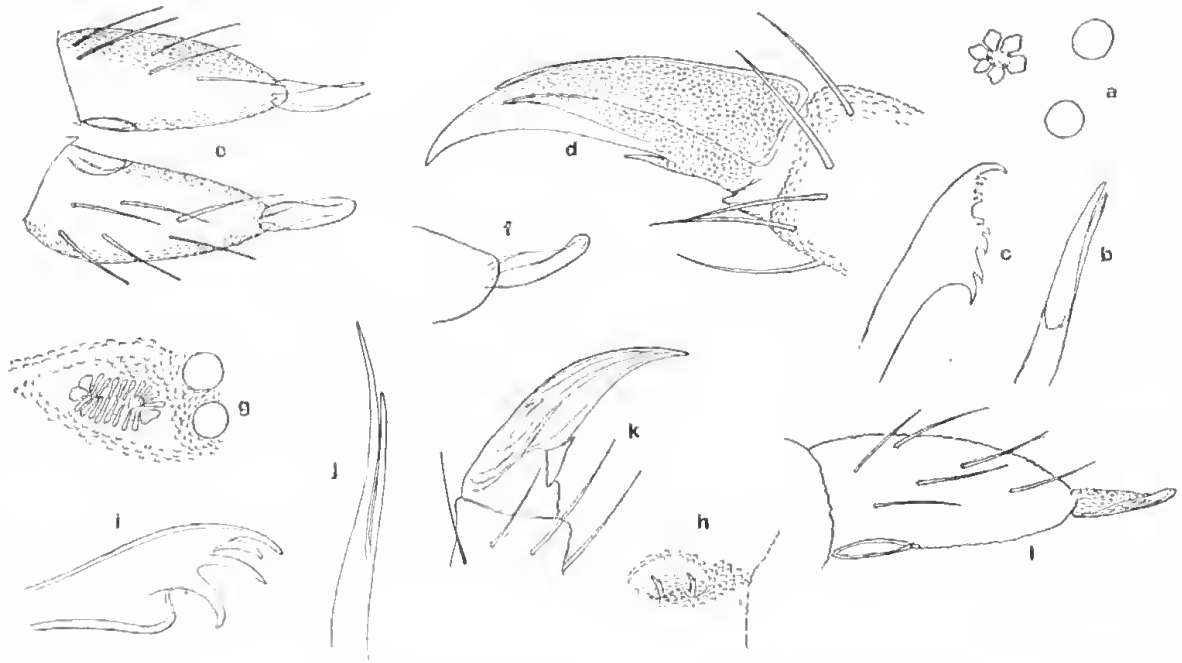


Fig. 1. *Pseudachorutes evansi* sp.n.; a, two anterior ocelli and p.a.o.; b, head of maxilla; c, head of mandible; d, claw and tip of tibiotarsus; e, mucrones and dentes from below; f, mucro from side. *Pseudachorutes tasmaniensis* sp.n.; g, p.a.o. and two anterior ocelli; h, sensory organ on ant. III; i, head of mandible; j, head of maxilla; k, claw; l, mucro and dens from side.

without clavate tibiotarsal setae; claws without inner or lateral teeth, and not distinctly granular. Furca well developed, mucro about one-third the length of dens as figured, dens with six ventral setae. Clothing short and sparse. Cuticle slightly granular.

Locality: Two specimens from Mt. Wellington, Tasmania, collected by Mr. J. W. Evans, September, 1935.

Remarks: Close to *P. rhacticus* (Carl), but differs in the larger post-antennal organ with its greater number of lobes, the shape of the mucro, and the absence of teeth to the claw.

NOTES ON THE AUSTRALASIAN SPECIES OF *PSEUDACHORUTES*.

Eight species of this genus are now known from the Australasian region: one from Java, three from New Zealand, and four from Australia. Among the last,

P. rhaeticus (Carl), well-known in Europe, may be an introduction; *P. incertus* Schött, from Queensland, is inadequately described, and fresh material is required for detailed study. The following key will help to separate the eight species.

1. Ocelli 5 on each side. P.a.o. with 3-4 lobes. Claws without teeth. Two clavate tibiotarsal hairs. Mucro with 2 teeth (?).
P. incertus Schött 1917, Queensland.
Ocelli 8 on each side 2.
2. P.a.o. elliptical with 10 or more lobes 3.
P.a.o. circular with fewer lobes 4.
3. P.a.o. twice as long as one ocellus, with 20 peripheral lobes.
P. tasmaniensis sp. n., Tasmania.
P.a.o. only as long as one ocellus, with 10-15 lobes.
P. rhaeticus (Carl), Australia, Europe.
4. Colour "carmine". P.a.o. not longer than a single ocellus, and with 3-4 lobes.
P. javanicus Handschin, Java.
Colour not carmine 5.
5. P.a.o. with 4 lobes. Colour dark brown *P. pacificus* Wom., New Zealand.
P.a.o. with 5 lobes. Claws without teeth, lateral edges with transverse ridges.
P. algidensis Carp., New Zealand.
P.a.o. with 6 lobes. Claws with basal inner and a pair of distal lateral teeth, lateral surface granulate *P. evansi* sp. n., Tasmania.
P.a.o. with 8 lobes. Claws with inner tooth in distal half, lateral surface not granulate *P. brunneus* Carp., New Zealand.

Genus *ACHORUTES* Templ. 1834, Börner.

ACHORUTES HIRTELLUS v. *WELLINGTONIA* v. nov.

Fig. 2 a-d.

Very close to the typical Australian form *A. hirtellus* v. *cirratus* Schött, but differs in that the fine serrations on the stems of the dorsal setae are almost obsolete, in that the fimbriations at the apex of these setae are broader, and in the longer simple pointed setae on the head, pleural areas, and anal segments. It is also somewhat larger, ranging to 4.0 mm. in length.

Locality: About half a dozen specimens from Mt. Wellington, Tasmania, collected by Mr. J. W. Evans, September, 1935.

Genus *ACANTHOMURUS* Womersley, 1934.

ACANTHOMURUS PLUMBEUS v. *LINEATUS* Womersley, 1934.

A single specimen of this variety, as yet only known from Tasmania, was collected on Mt. Wellington, Tasmania, by Mr. J. W. Evans, in September, 1935.

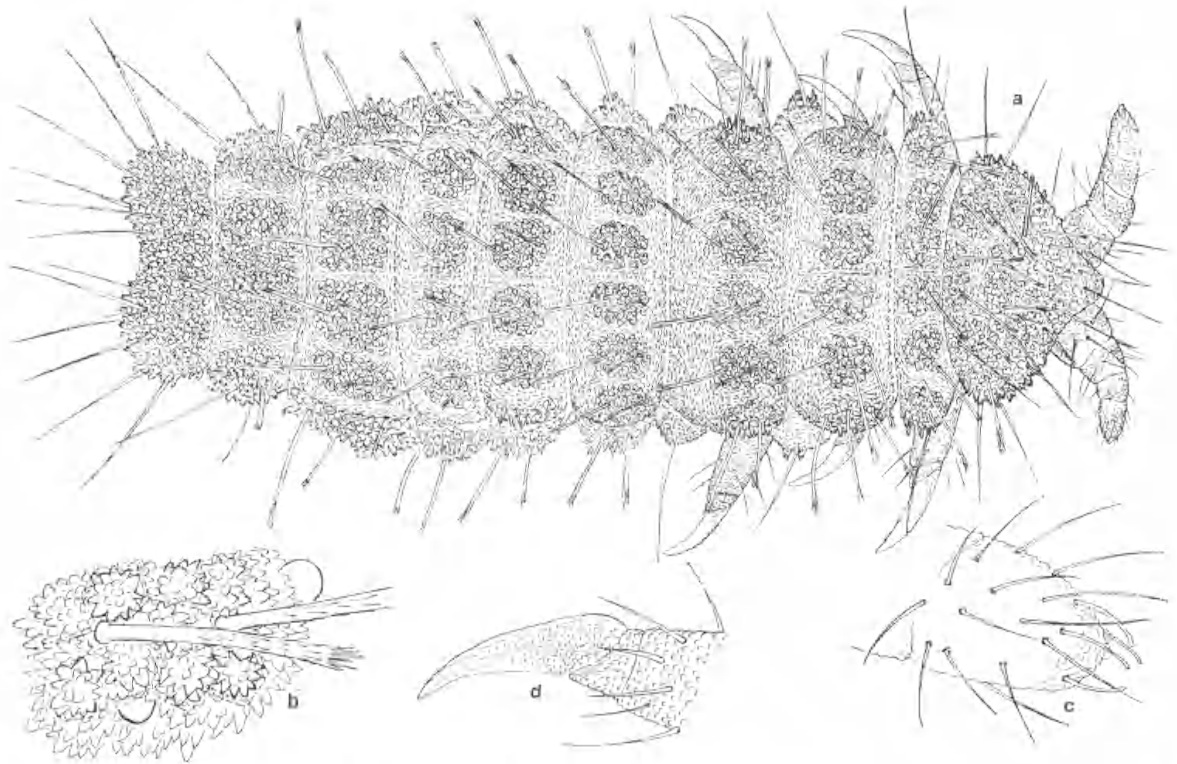


Fig. 2. *Achorutes hirtellus* v. *wellingtonia* v.n.; a, entire dorsal view; b, ocelli; c, tip of aut. IV; d, claw.

Genus *ISOTOMA* s. str. Börner.

ISOTOMA PRITCHARDI sp. nov.

syn. *Isotoma maritima* Tullbg. Wom. (Collembolean Fauna of New Zealand—in press).

Fig. 3 a-d.

In the above paper at present in the press I have recorded a number of specimens of an *Isotoma* collected by Mr. E. D. Pritchard, on the coast near Auckland, as the European *I. maritima* Tullbg. The specimens agreed in all details with this species except the number of the ocelli. These were uncertain, and although I could be sure of seeing only six on each side I assumed, as my preparations were not too clear, that there was the full number of eight.

Recently, however, Mr. H. M. Hale has collected some specimens on the reef at Sellick's Beach, S. Australia, March 8, 1936, which are identical with the New Zealand specimens, and in which the eyes are definitely only six on each side.

Such a close resemblance to the Northern *I. maritima* Tullbg. is paralleled in *Archisotoma besselsi* Pack of the Northern Hemisphere with eight eyes, and the

very close *I. brucei* Carp. from the Southern Orkneys and New Zealand, which differs principally in only having six eyes. The description of the new species is as follows.

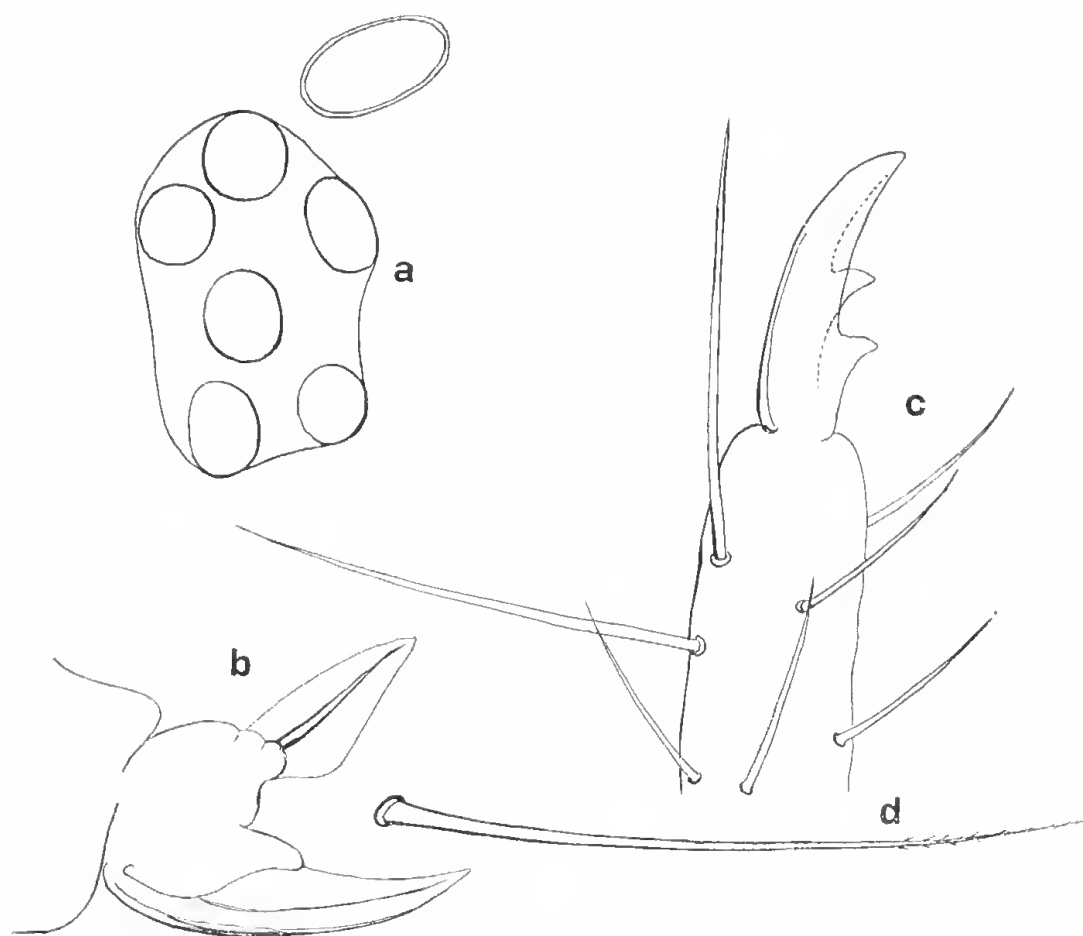


Fig. 3. *Isotoma pritchardi* sp.n.; a, ocelli and p.a.o.; b, foot; c, micro and tip of dens; d, one of long setae of apical abdominal segments.

Description: Colour, greenish-black. Length to 1.8 mm. Antennae twice as long as head diagonal; ratio of segments = 35 : 55 : 55 : 75; IV broader just before apex than at base, III with sensory organ as figured. Eyes, six on each side, on dark fields, subequal. P.a.o. broadly oval, double-walled, and about one and one-half times as long as an ocellus. Body slender of typical *Isotoma* build, abdomen III and IV equal. Legs slender, claws without inner tooth, but apparently with a pair of outer fine teeth reaching to the middle of outer edge; empodial appendage with broad inner and outer lamellae. Furca slender, reaching ventral tube; micro small, with three teeth as in *I. maritima*; dens apically with two long setae, one

over-reaching mucro. Clothing of moderately short simple setae, but on abdominal segments are some longer upstanding setae, which towards their apices are very finely ciliated.

Locality: On edge of reef, Sellick's Beach, S. Australia, March 8, 1936 (H.M.H.). Co-type material from Auckland, N.Z.

Genus ENTOMOBRYA Rondani, 1861.

ENTOMOBRYA VIRGATA V. NIGRELLA Wom., 1934.

Two specimens From Mt. Wellington, Tasmania, in September, 1935, collected by Mr. J. W. Evans.

Genus PSEUDOSINELLA Schffr., 1897.

PSEUDOSINELLA FASCIATA Wom., 1934.

A single specimen from Mt. Wellington, Tasmania, in September, 1935, collected by Mr. J. W. Evans.

Genus MESIRA Börner, 1903.

MESIRA NIGROCEPHALA sp. n.

Fig. 4 a-c.

Description: Length to 3.0 mm. Colour: head entirely blue-black, thoracic and first three abdominal segments yellowish, with slight mottling and dark lateral edges; abdomen IV usually with a few dark markings, sometimes almost entirely black. Legs and furca light with a little mottling. Antennae about half the body length; ratio of segments = 16:25:18:37, IV annulated and with apical knob. Eyes eight on each side on dark fields. Ratio of body segments = head:th. II:III:abd. I:II:III:IV:V:VI = 32:22:15:7:10:10:57:10:4; mesonotum not overlapping head. Legs long; claws with outer basal teeth, a pair of inner basal teeth at one-third, and two distal inner teeth. Furca reaching ventral tube, mucro bidentate with basal spine. Clothing of dens of dark brown scales, with numerous short striations, and rounded apex; hairs on body normal.

Locality: A number of specimens from Korait, Victoria, collected by Mr. R. T. M. Prescott, on August 12, 1935.

Genus PERICRYPTA Ritter, 1910.

PERICRYPTA TASMANIAE sp. n.

Figs. 4 d-e, 5 a-c.

Description: Length to 3.0 mm. Antennae longer than the body; ratio of segments = 45 : 57 : 55 : 70, IV indistinctly annulated. Eyes, eight on each side on elongate black fields. Ratio of head = th. II : III : abd. I : II : III : IV : V : VI =

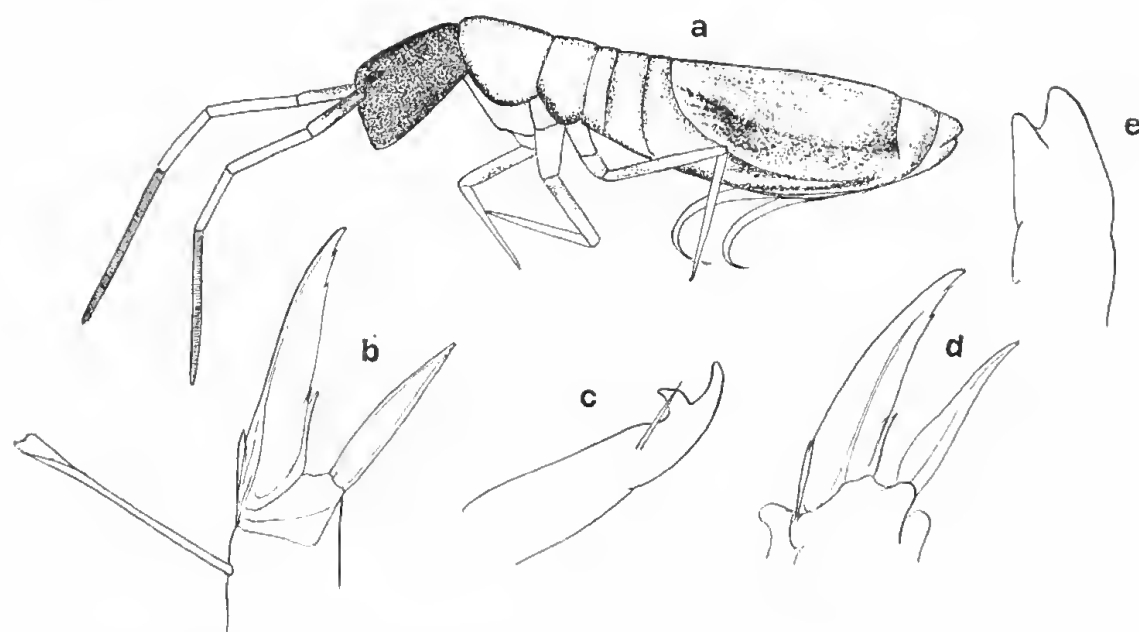


Fig. 4. *Mesira nigrocephala* sp.n.: a, entire lateral view; b, foot; c, micro and tip of dens. *Pericrypta tasmaniae* sp.n.; d, foot; e, micro.

35 : 20 : 10 : 8 : 10 : 8 : 60 : 8 : 4. Legs long and slender, tibiotarsus with plica, claws with a pair of outer basal teeth, a pair of basal inner teeth at one-third, and two fine distal teeth; empodial appendage slender, reaching first distal inner tooth. Furca long, reaching past ventral tube; ratio of manubrium to microdens = 47 : 60; micro normal, with two blunt teeth. Clothing of normal setae.

Remarks: Of this interesting species there are three very distinct colour forms in the collection, two warranting varietal names. The colour descriptions are:

FORMA PRINCIPALIS.

Generally deep bluish on yellow ground, the blue pigment extending all over except for some light longitudinal striations. Legs heavily ringed with blue. Antennae light, except for a bluish ring at base of segments. Furca light.

VAR. MACULATA VAR. NOV.

Ground colour yellow, head with a fine dark line between antennae, and brown on lateral edges; meso- and meta-thorax with brownish pigment laterally; meso- and meta-thorax and abdomen I and II with a pair of broken brownish medial

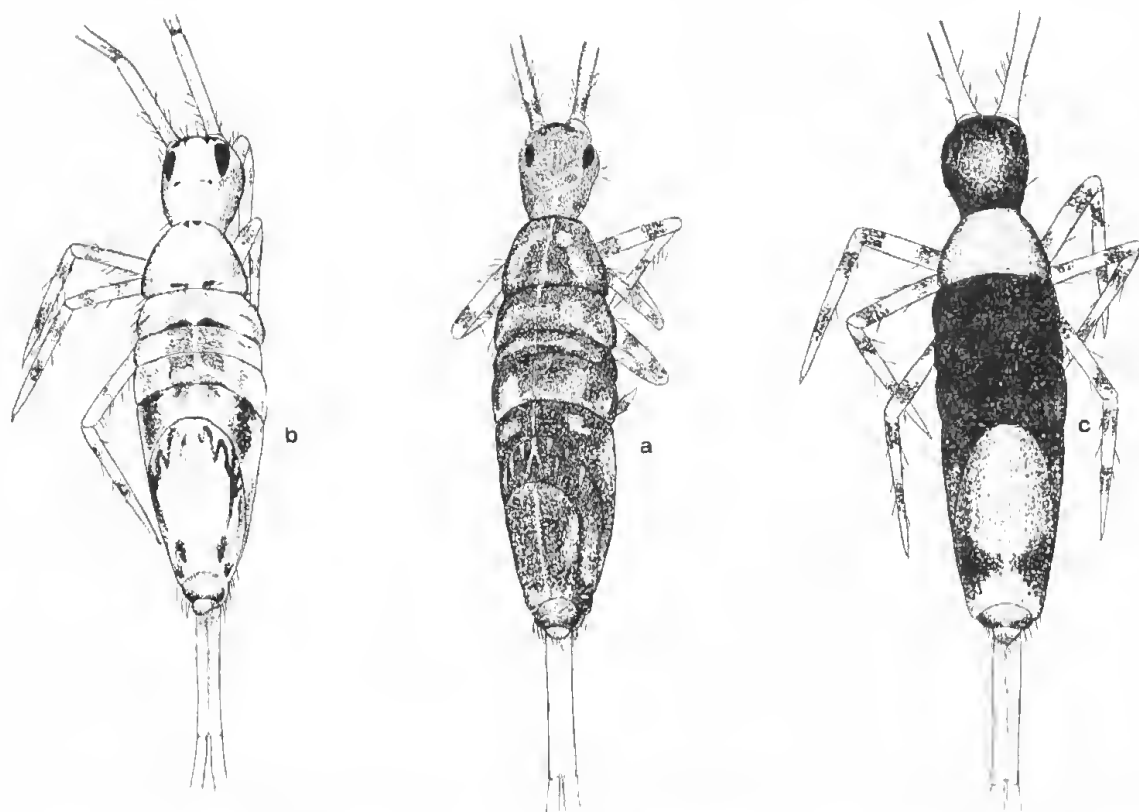


Fig. 5. *Pericrypta tasmanica* sp.n.; a, *forma principalis*, entire dorsal view; b, *forma maculata* nov., entire dorsal view; c, *forma fasciata* nov., entire dorsal view.

longitudinal streaks. Abdomen IV anteriorly with an irregular transverse wavy line which in centre is brownish and laterally bluish-black; posteriorly there are two longitudinal streaks formed from two dark patches, the sides laterally slightly pigmented. Abdomen III sublaterally with broad brownish patches; V with posterolateral brown patches. Legs lightly banded; antennae blue at extreme base of segments.

VAR. FASCIATA VAR. NOV.

Head entirely black except for a median light patch. Meso-thorax only pigmented on lateral margins. Meta-thorax and abdomen I-III entirely black. Abdomen IV slightly pigmented laterally, this pigment darkening at about one-fifth

from apex, and here extending inwards but not meeting. Abdomen V with postero-lateral dark patches. Legs fairly strongly banded. Antennae without the basal segmental bands, but here with a small touch of blue ventrally.

Locality. About five specimens of the typical form and one each of the varieties from Mt. Wellington, Tasmania, in September, 1935, collected by Mr. J. W. Evans.

COLLEMBOLA SYMPHYPLEONA.

FAMILY SMINTHURIDAE LUBBOCK, 1876.

GENUS KATIANNA Börner.

KATIANNA AUSTRALIS Wom., 1932.

Dunally, Tasmania, September, 1935, Mr. J. W. Evans.

GENUS PARAKATIANNA Wom., 1932.

PARAKATIANNA MONTANA sp. n.

Text Fig. 6a.

Description: Length, 1.06 mm. Colour, greenish-black, with a longitudinal stripe of yellow inside of the eyes, and joined posteriorly by a transverse stripe of same colour; body with a thin median longitudinal stripe and four or five transverse, but forwardly inclined stripes all of yellow; anal segments with a pair of yellow dots. Antennae nearly twice as long as head; ratio of segments = 15:30:45:110; IV with 15 subdivisions, VII with peg-like organ. Eyes eight on each side on dark patches. Legs long and thin; claws slender without teeth; empodial appendage with narrow inner and outer lamellae, apparently without apical bristle on all legs; tibiotarsi with 2-3 clavate hairs. Furca long and normal; mucro one-third as long as dens, with slightly upturned apex and edges of lamellae smooth. Clothing rather sparse, of fine simple curved setae, those on antennae normal for the genus; bothriotrichia, three on abdomen on each side, and one on genital segments.

Locality: Three specimens collected by Master M. Trigg on Mt. Buffalo, Victoria, August, 1935.

Remarks: This species is very different from any other of the genus in its colouration.

PARAKATIANNA SERRATA sp. n.

Fig. 6 b-d.

Description: Length to 1.0 mm. Colour, mottley orange, with the apical antennal segments dark, and the eye-patches black; legs and furca light. Antennae

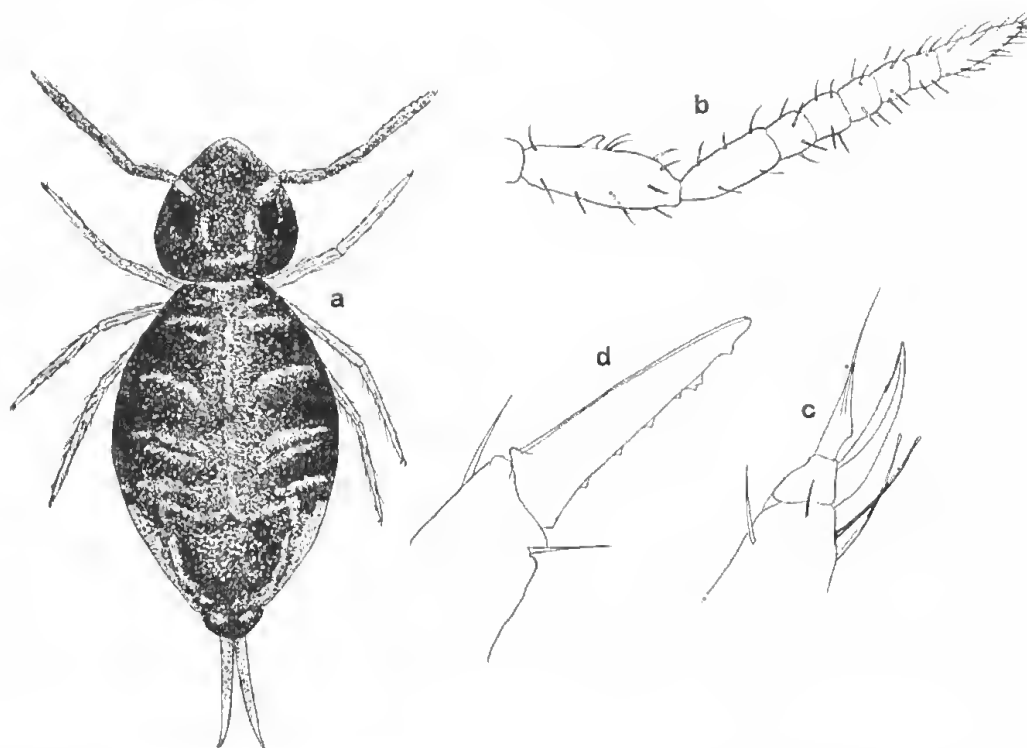


Fig. 6. *Parakatianna montana* sp.n.; a, entire dorsal view. *Parakatianna serrata* sp.n.; b, ant. III and IV; c, foot; d, mucro and tip of dens.

twice as long as head; ratio of segments = 13:20:35:70; IV with 8-10 subdivisions, last somewhat tapering; III with peg-like organ. Eyes eight on each side. Legs normal. Claws with fine inner tooth; empodial appendage with angular inner lamella and narrow outer lamella ending in a long fine-pointed bristle reaching tip of claw; two to three clavate tibiotarsal hairs. Furca, mucro: dens = 13:45; mucro with seven strong teeth as figured, the second and third from apex fused. Clothing of fine simple curved setae rather more numerous than in preceding species; bothriotrichia three on abdomen, one on genital segments.

Locality: Three specimens from Mt. Buffalo, Victoria, collected by Master M. Trigg in August, 1935.

Remarks: Differs from all other species of the genus in the peculiar teeth to the mucro, and in its colour.

PARAKATIANNA OBSCURA sp. n.

Fig. 7 a-e.

Description: Length to 1.25 mm. Colour, ground dirty yellowish-grey, with a longitudinal yellow patch medially between the eyes; two yellow spots before apex of dorsum, and one or two on anal segments dorsally; otherwise with black markings as indicated in text figures; some specimens have a lighter patch before apex of dorsum; antennae yellowish-grey, darker on apical segments; legs, furca

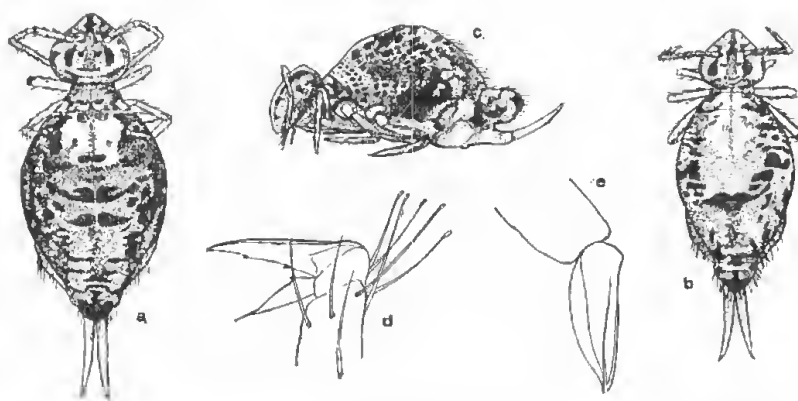


Fig. 7. *Parakatianna obscura* sp.n.; a, dorsal view of dark form; b, dorsal view of light form; c, lateral view; d, claw and tip of tibiotarsus; e, mucro from side.

and venter lighter. Antennae twice as long as head diagonal; ratio of segments = 3:9:11:28; III without peg-like organ, IV with about 16 subdivisions. Claws strong, with a basal inner tooth and two distal teeth, outer sheath absent; empodial appendage long and pointed with narrow inner and outer lamellae, reaching middle inner tooth of claw; inner lamella with short basal spine at angle, apex with short subapical bristle, alike on all feet; tibiotarsus with 4-5 long clavate tenent setae. Furca long, ratio dens:mucro = 100:20, mucro with broad outer lamella and narrow inner lamella, apex blunt; teeth only slightly indicated by faint crenulations. Clothing of sparse but strong setae, especially on head and anal segments, although not stronger than in most species of *Parakatianna*. Sensory setae three on body on each side, and one on anal segments.

Locality: A large number of specimens from Leeton, N.S.W., collected by Mr. K. C. McKeown, June 22, 1927.

Remarks: This is a second abnormal species of the genus agreeing with *Parakatianna anomala* Wom. in the absence of the peg-like organ on antennae III. From this species it differs in the dentition of the claws, clothing, and form of the mucro, as well as in colouration.